

Anacanthobatis borneensis, the Second New Anacanthobatid Skate from the South China Sea*

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In November, 1964, the research vessel Cape St. Mary of the Fisheries Research Station, Hong Kong, made her seventh cruise of the year to the coast of Sarawak, Borneo. During this cruise, a series of AGASSIZ trawl-hauls were taken from deep waters. At Station 32, which was about 270 miles north of Kuching, Sarawak, 19 fish species were collected from depths of 456 to 450 fathoms. Among these fishes, a new skate of the genus *Anacanthobatis* has been identified. The following account of this skate is the first record of *Anacanthobatis*, as well as the second record of the Anacanthobatidae, from the South China Sea.

According to BIGELOW and SCHRODER (1962), *Anacanthobatis* is distinguished from *Springeria*, the other genus of the family, by the absence of the leaf-like expansion at the tip of the snout. It is known only by three species: *A. marmoratus* VON BONDE and SWART, 1924, from Durban, Natal, and *A. americanus* and *A. longirostris*, both of BIGELOW and SCHROEDER, 1962, from the Gulf of Mexico. The present new species from the South China Sea is, therefore, the fourth species of the genus, which can readily be distinguished from the known forms by the following simple key.

Key to the species of *Anacanthobatis*

- 1a. Pelvics completely fused along their whole length with the root of tail
●●.....*A. marmoratus* VON BONDE and SWART, 1924, Natal
- 1b. Pelvics not completely fused along their whole length with the root of tail
●●..... 2
- 2a. Length of snout 4 to 5 times as long as diameter of orbit; length of tail 53 percent of total length; length of disc 47 percent of total length
.....*A. americanus* BIGELOW and SCHROEDER, 1962, Gulf of Mexico
- 2b. Length of snout 7 or 9 times as long as diameter of orbit; length of tail 43 percent or 44 percent of total length; length of disc 57 percent or 58 percent of total length..... 3
- 3a. Length of snout in front of eyes 9 times as long as diameter of orbit; length of snout in front of mouth 6.8 times as long as distance between exposed

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- nostrils; extreme breadth of disc 57 percent of total length
.....*A. longirostris* BIGELOW and SCHROEDER, 1962, Gulf of Mexico
- 3b. Length of snout in front of eyes 7 times as long as diameter of orbit; length
of snout in front of mouth 4.1 times as long as distance between exposed
nostrils; extreme breadth of disc 66 percent of total length
.....*A. borneensis*, new species, South China Sea

For the convenience in the comparison of pertinent characters with the known forms, the following proportional and meristic data of the present new skate are presented in the same sequence as in BIGELOW and SCHROEDER (1962).

Anacanthobatis borneensis, new species

Figs. 1-2

Study material.—Holotype, BMNH. No. 1965. 1. 29. 1, mature male, 317 mm in total length (from the tip of the tail to the base of the terminal filament), collected at Sta. 32 during Cruise 7/64 of the RV/Cape St. Mary at the terminal position of Lat. 6°0.18'N—Long. 109°57.4'E, about 270 miles north of Kuching, Sarawak, Borneo, in depths from 456 to 450 fathoms, on a bottom of soft mud and rich invertebrate fauna (see *Remarks*), AGASSIZ trawl, November 5, 1964.

Distinctive characters.—At a glance, the long snout readily sets *Anacanthobatis borneensis* apart from *A. americanus*, while at the same time indicates a close resemblance to *A. longirostris*. As compared in the key, however, it is not as long in *A. borneensis* as in *A. longirostris*.

In addition to the distinguishing characters treated in the key, *A. borneensis* can further be differentiated from its three relatives by having a strikingly distinct colour pattern consisting of a broadly white underside which occupies the anterior two-thirds of the disc; by having a pair of long claspers extending conspicuously far beyond the posterior tip of the pelvic fin by a length of 39 mm; and by having on its anterior profile a comparatively distinct smooth concavity at the midlevel of the snout, and another similar one at the level through the eyes.

Dermal papillae, which have previously been unique of *A. marmoratus*, are now also found on the dorsal surface of the disc in *A. borneensis*.

Description of holotype.—(Proportional dimensions are in percentage of total length). *Disc*: extreme breadth 66.2; length 59.0. *Snout lengths*: in front of orbits 24.6; in front of mouth 25.2. *Orbital measurements*: horizontal diameter of orbit 2.3; distance between orbits 3.5. *Spiracle*: length 1.1; distance between 6.9. *Mouth*: breadth 6.6. *Exposed nostrils*: distance between inner ends 6.2. *Gill openings*: length of first 1.0; third 1.0; fifth 0.6; distance between inner ends of first 11.4; of fifth 6.8. *Caudal fin*: length of base of upper 2.8; of lower 1.3. *Pelvics*: length of anterior limb 19.4; distance from origin of anterior limb to tip of posterior lobe 16.0. *Distance*: from

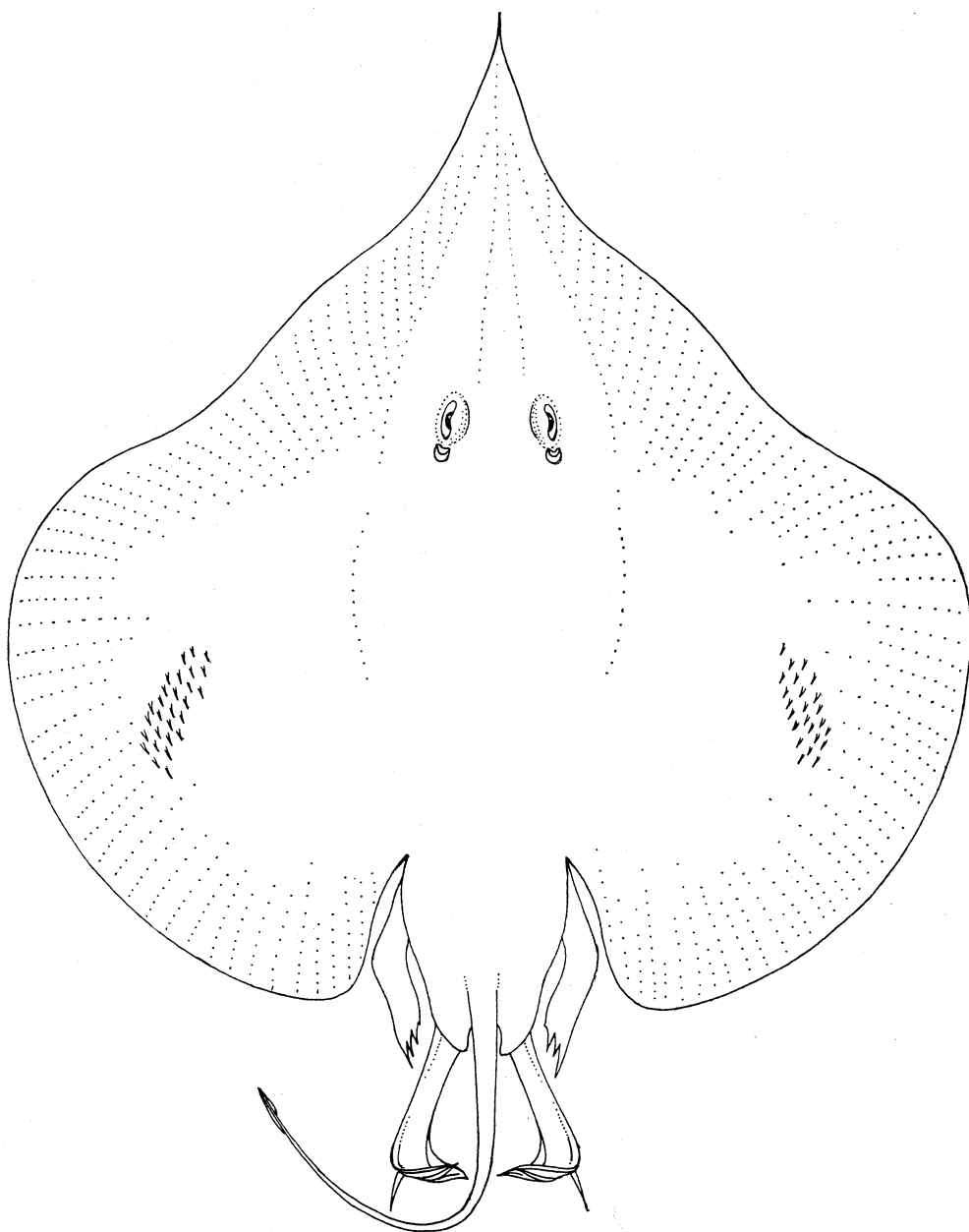


Fig. 1. *Anacanthobatis borneensis*, dorsal view of holotype.

center of cloaca to base of terminal filament of snout 58.4; from center of cloaca to tip of tail 44.2.

Disc 0.89 times as broad as long; maximum angle in front of spiracles 80° ; end of snout with a very short, slender filament. Anterior profile of disc forming a very acute angle at tip of snout, followed by two smooth concavities; outer and posterior

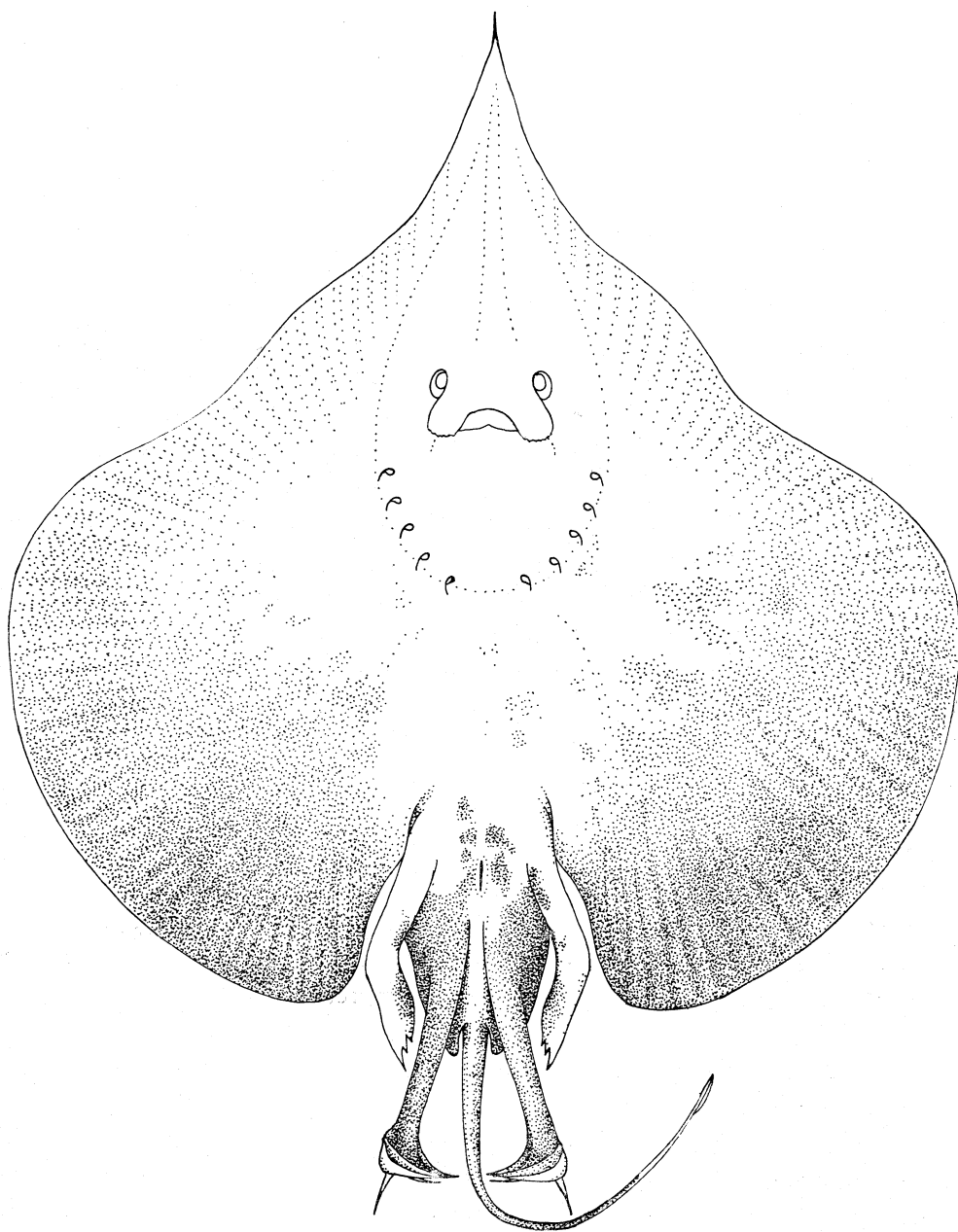


Fig. 2. *Anacanthobatis borneensis*, ventral view of holotype.

profiles broadly rounded; axis of greatest breadth about 120 percent of distance from tip of snout (exclusive of filament) to axis of pectorals. Tail very slender, anterior cross-section compressed dorsoventrally, becoming squarish posteriorly; skin-fold originated from about 5 mm behind tip of pelvic. Length of tail from center of cloaca 0.76 times distance from center of cloaca to tip of snout.

Skin smooth dorsally with sparsely scattered papillae on disc, and those on basal portion of tail arranged in two lateral series; a patch of alar thorns present on each pectoral fin. Upper surface with mucous pores along median portion from snout to base of pelvic.

Snout in front of orbits (to base of rostral filament) 6.5 times as long as distance between orbits; its length in front of mouth 4.1 times as long as distance between exposed nostrils. Orbit 0.91 times as long as distance between orbits, and 3.1 times as long as spiracle. Nasal curtain finely fringed; outer margin of nostril slightly expanded and produced to form a flap of 5 mm high with irregular edges. Mouth slightly arched, much less so when compared with male of *A. marmoratus* (BIGELOW and SCHROEDER, 1962: 221, fig. 16); teeth 24/23 with rounded base, arranged in six vertical rows at middle of jaw, and with long, slender, pointed cusps.

Gill openings minute with curved slits, first about one-seventh as long as breadth of mouth, fifth two-thirds as long as first; distance between inner ends of first pair 2.3 times, of fifth pair 1.1 times, as long as distance between exposed nostrils.

Anterior rays of pectorals extending almost to tip of snout. Rostral cartilage very slender along its whole length, extending almost to base of terminal filament. Area on each side of rostrum translucent.

Dorsal fins absent. Base of upper lobe of caudal fin about half, of lower lobe about one-fifth, as long as distance between exposed nostril; two lobes discontinuous at tip of tail. Length of pelvic longer than that of anterior leglike subdivision of fin; leglike division fleshy, much broader than thick, with inner edge of terminal segment scalloped, corresponding to lips of three radial cartilages; posterior lobe of pelvic with a rounded tip, reaching a short way beyond posterior edge of disc; outer margin of pelvic entirely free from pectoral; inner margin of pelvic joined six-sevenths its length to side of tail. Alar thorns arranged in five oblique rows, length of right patch 28 percent of snout in front of orbits; width of this same patch 40 percent of length of patch; all alar thorns closely grouped together, without having any apart from main patch. The claspers, equipped with two exposed sharp hooks, extend conspicuously far beyond the tips of the pelvics by a distance twice as long as the distance between the inner ends of the nostrils.

Colour.—*Disc*: upper surface brownish, darker at patches of alar thorns, with sparsely scattered dark-brown specks, each being projection of a dermal papilla; lower snrface broadly white along its central section from tip of snout to cloaca and continuing onto claspers, becoming mottled brownish and dusky brownish on posterior half of pectoral fin (fig. 2). *Leglike divisions of pelvics*: white both dorsally and ventrally, with several dusky brownish blotches along inner margin. *Pelvics*: blackish brown on sides, with an elongate patch extending to each side of anus anteriorly. *Claspers*: blackish brown, with parts where hooks emerged whitish. *Tail*: dorsally brownish, ventrally from the anus to level through tips of pelvics white, then becoming brownish until about 45 mm from tip, where tail being distinctly white.

Remarks.—The seabed at Station 32 has been found to consist of soft mud and a very rich invertebrate fauna comprising about thirty species of crustaceans and a great abundance of glass sponges of the genus *Hyalonema*. Owing to the lack of adequate reference literature, the 18 fish species taken with the present new skate have mostly been identified to only the genera. These are listed below under their respective families.

Alepocephalidae: *Aleposomus* sp. Stomiidae: *Melanostomias* sp.; *Cyclothone* sp. Myctophidae: *Myctophum* sp. Bathypteroidae: *Bathypterois* sp. Congridae: *Congrelus* sp. An unknown species of Apodes of unknown familial status. Macruridae: *Coelorhynchus* sp.; *Mateocephalus* sp. Bathygadidae: *Bathygadus multifilis* GÜNTHER. Trichiuridae: *Lepidopus tenuis* GÜNTHER. Brotulidae: *Lamprogrammus* sp.; *Mastigopterus* sp.; *Barathronus* sp.; *Sirembo* sp. Chaunacidae: *Chaunax pictus* LOWE. Onchocephalidae: *Halicmetus* sp.

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